

TIANJIN NORTH JINHENG CHEMICAL INDUSTRY PLANT	material safety data sheet
	ANTIOXIDANT 168

1. PRODUCT IDENTIFICATION

Trade Name: ANTIOXIDANT 168

Intended Use: Antioxidant/Stabilizer

Health:	1
Flammability:	1
Reactivity:	0
Personal Protection:	

HMIS RATING:

Important Use Information:

This material is not intended for use in products for which prolonged contact with mucous membranes or abraded skin, body fluids, or abraded skin, or implantation within the human body, is specifically intended, unless the finished product has been tested in accordance with national and international applicable safety regulations. Because of the wide range of such potential uses, Network Performance Additives is not able to recommend this material as safe and effective for such uses and assumes no liability for such uses.

2. COMPOSITION & INFORMATION ON INGREDIENTS

OSHA	CAS No.	Chemical Identity	Weight %
*	31570-04-4	Tris (2,4-di-(tert)-butylphenyl)phoshite	100wt%

* = OSHA Hazardous Ingredient

3. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: White to off-white powder

Flammability: Use of proper grounding techniques are recommended when emptying this product from containers weight more than 1 pound. A build-up of Hazardous electrostatic charges may cause a flash fire or explosion when the contents are emptied into a flammable atmosphere. See Section 7.

Environmental: This product is moderately toxic to aquatic organisms. Prevent spillage or leakage to a body of water.

Health: This product presents little or no immediate hazard to people if spilled or released.

Disposal: Sweep or shovel spilled material and place into a sealed container. Pre-wet the material to prevent dust build-up. Dispose in accordance with local, state and federal regulations. Incineration is recommended. This product is not a hazardous waste under RCRA.

Primary Route of Entry: Dermal, inhalation

Eye: This product is not expected to cause eye irritation.

Skin: This product is not expected to cause skin sensitization. It is not expected to cause allergic skin reactions based upon test results.

Swallowing: Small amounts, if swallowed, are not expected to cause injury; avoid swallowing.

TIANJIN NORTH JINHENG CHEMICAL INDUSTRY PLANT	material safety data sheet
ANTIOXIDANT 168	

Inhalation: This product is considered to present little risk if inhaled. An Internal Exposure Limit (IEL) of 10 mg/m³ air (8-hour TWA) has been established.

Note: Refer to **Section 11, Toxicological Information** for details.

4. FIRST AID MEASURES

First Aid for Swallowing: If swallowed, give at least 3-4 glasses of water, but DO NOT induce vomiting. Do not give anything by mouth to an unconscious or convulsing person.

First Aid for Skin: Following skin contact, wipe away excess material with a dry towel. Then wash affected areas with plenty of water and soap, if available, for several minutes. Get medical attention if irritation occurs.

First Aid for Inhalation: If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops, or if breathing becomes difficult.

First Aid for Eye: Following eye contact, flush eyes with plenty of water for several minutes. Get medical attention if irritation occurs.

Note to Physician: None known.

5. FIRE FIGHTING MEASURES

Flash Point: > 302°F (>150°C)

Extinguishing Media: Carbon dioxide, dry chemical, foam, water mist

Unusual Hazards: The product can form an explosive dust/air mixture. Avoid dust formation and control ignition sources. Employ grounding, venting and explosion relief provisions in accord with accepted engineering practices in process operations capable of generating dust and/or static electricity.

Fire Fighting Instructions: Use self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Spill or Release Procedures: Pre-wet material with water to avoid dust formation. Vacuum and place in sealable container for disposal. Wear protective equipment as specified below. Avoid creating dusty conditions. Flush residue with water.

7. HANDLING AND STORAGE

Handling: Wash thoroughly after handling and before eating, drinking, or using tobacco products. In accordance with good industrial practice, handle with care and avoid unnecessary personal contact. Avoid contact with eyes and prolonged or repeated skin contact. Avoid continuous or repetitive breathing of dust. Use only with adequate ventilation. For industrial use ONLY.

Storage: Keep container tightly closed when not in use and during transport. Minimize exposure to high humidity or high moisture conditions to maintain product integrity and minimize hydrolysis effects.

TIANJIN NORTH JINHENG CHEMICAL INDUSTRY PLANT	material safety data sheet
	ANTIOXIDANT 168

Explosion Hazards:

- *For All Packages:*

DANGER~ EXPLOSION RISK

- Risk of explosion if an air-dust mixture forms
- Avoid creating dusty conditions
- Empty only into grounded containers
- If container is larger than 550 US gallons (2m³) in volume, or when flammable solvents are present, the container must be inverted(with inert gas flush) or the system otherwise designed to prevent or contain an explosion-see expert advise.
- *In addition, for products packaged in fused-lined (coated) fiber drums, fiber drums with conductive liner, steel drums, steel pails or bulk bags, the following instructions apply:*
 - Always ground the package before emptying
- *For products that have external protective packaging, discharge product only from the primary product packaging, NOT from external containers or its liner.*

The user is responsible for designing a system that safely handles solid additives and to ensure proper training of employees in the system's use.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

- Engineering Controls:** Work in well-ventilated areas.
General Protection: Wear coveralls.
Eye/Face Protection: Wear safety glasses or goggles if eye contact is possible.
Skin Protection: Wear gloves as a standard handling procedure.
Respiratory Protection: Use NIOSH-approved respirator suitable for respirable dusts, if TLV is exceeded.

9. PHYSICAL AND CHEMICAL PROPERTIES:

- Appearance:** White to off-white powder
Odor: No discernable odor
Boiling Point: Not Applicable
Evaporation Rate: Not Applicable
Freezing/Melting Point: 181 - 186°C [358 - 367°F]
Decomposition Temperature: > 350°C [>662°F]
Specific Gravity: ~ 1.0 to 1.02 [H₂O = 1]

Vapor Density: Not Applicable
% Volatile: < 0.5%
Vapor Pressure: ~ 1 x 10⁻¹⁰ mm HG at 20°C
Viscosity: 24.4 Centipoise at 70°C (158°F)
pH: Not applicable
Solubility: < 1 ppm in water at 20°C (68°F)
Octanol/Water Coefficient: Log Po/w = >> 6
Ignition: 380°C BAM

TIANJIN NORTH JINHENG CHEMICAL INDUSTRY PLANT	material safety data sheet effective date: 5/26/2005
	ANTIOXIDANT 168

10. STABILITY AND REACTIVITY

Chemical Stability: Stable

Incompatibility with other Materials: Strong oxidizing agents, strong acids, strong bases

Hazardous Decomposition Products: Thermal decomposition and burning may produce carbon monoxide, carbon dioxide, phosphorus oxides and other toxic compounds.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity: LD50 (Rats, Mice, Chinese hamster): > 6,000 mg/kg

Acute Dermal Toxicity: LD50 (Rats): > 2,000 mg/kg

Intraperitoneal: LD50 (Rats): >2,000 mg/kg

Skin Irritation: (Rabbits) Not an irritant

Eye Irritation: (Rabbits) Not an irritant

Sensitization: (Guinea pigs) Not a sensitizer in the optimum test.
RIPT (Humans) In 4 separate studies, a total of 3 or 183 subjects exhibited reactions indicative of sensitization; concentrations ranged from 25% in petrolatum (25 subjects), 0.5% in dimethyl phthalate (58 subjects), to neat material (100 subjects).

Mutagenicity: Ames test: Non-mutagenic
Nucleus anomaly test (Chinese hamsters): Non-mutagenic
Chromosome study in somatic cells (Chinese hamsters): Non-mutagenic
Chromosome study (spermatogonia/spermatocytes, male mouse): Non-mutagenic
Dominant lethal study (Mice): No evidence of a dominant lethal effect in the offspring of treated male mice
Saccharomyces cerevisiae MP-1: Non-mutagenic
Sister chromatid exchange (Chinese hamster): Non-mutagenic

Teratogenicity/Reproductive Toxicity: Teratogenicity
(Rabbits): No embryotoxic or teratogenic effects were observed for dose levels of 0, 200, 600 and 1,200mg/kg given by gavage on gestation days 6-18.
2-Generation Reproductive Study (Rats): Male and female abino rats received diet containing 0, 114, 285.7 and 714 mg/kg/day. All doses were well tolerated with respect to general toxic effects. The high dose caused a slight reduction of the fertility rate in F0 parental animals. However, this observation was not seen in the F1 parents, implying that it may have occurred just by chance and was not treatment related. No other parameters were adversely affected. The no-observable effect level (NOEL) was 285.7 mg/kg/day.

Subchronic Toxicity: 3-Month Toxicity Study (Rats): Groups of animals were treated with 0, 125, 250, 500 and 1,000 mg/kg per day by average for 13 weeks. Separate animals were allocated for recovery groups at the high dose and control. At 1,000 mg/kg, relative and absolute kidney weights of the females only were increased, an increase with persisted until the end of the recovery.

Chronic Toxicity/Carcinogenicity: Groups of CD rats were fed diets for 104 weeks containing an equivalent intake of 0, 17.8, 53.4 and 147 mg/kg/day. No treatment-related effects or increased tumor incidences were seen. The NOEL was at least 147 mg/kg/day.

TIANJIN NORTH JINHENG CHEMICAL INDUSTRY PLANT	material safety data sheet
	ANTIOXIDANT 168

Neurotoxicity: White leghorn hen: No signs of neurotoxicity.
Cholinesterase Inhibition: Cholinesterase inhibition in vitro: No inhibition at a concentration of 10ppm.

12. ECOLOGICAL INFORMATION

Acute Toxicity to Fish: Zebra Fish, 96-hour LC50: 4.05 ppm
Golden orfe, 96-hour, LC50: 42 ppm
Rainbow Trout, 96-hour, LC50: 49 ppm
Carp, 96-hour, LC50: 66 ppm
Catfish, 96-hour, LC50: 70 ppm
Bluegill, 96-hour, LC50: 84 ppm

Acute Toxicity to Invertebrates: Daphnia magna, 24-hour, EC50: 510 ppm

Acute Toxicity to Algae: Green algae, 0-72 hour, EC50: > 75.2 ppm

Toxicity to Sewage Bacteria: Inhibitory concentrate on respiration of aerobic wastewater bacteria: IC20, IC50, IC80: >100 ppm

Bioconcentrations: Japanese (MITI) bioaccumulation study, carp: Not bioaccumulative at test concentrations of 1.0 and 0.15 ppm.

Biodegradability: Degradability in modified Sturm test: Not biodegradable, with 3-6% in 28 days.

13. DISPOSAL CONSIDERATIONS

Disposal Considerations: Incinerate in a chemical incinerator equipped with an after-burner and scrubber. Follow all federal, state and local regulations.

14. TRANSPORT INFORMATION

This product is not regulated by any means of transport.

15. REGULATORY INFORMATION:

Chemical Weapons Convention (CWC):
This product does not contain any chemicals listed under the Chemical Weapons Convention Schedule of Chemicals.

US Federal Regulations:

Clean Air Act – Hazardous Air Pollutants (HAP):

This product contains no hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act.

Clear Air Act – Ozone Depleting Substances (ODS):

This product does NOT contain nor was manufactured with any Class I or Class II ozone depleting substances (ODS) as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App. A + B).

Clean Water Act – Priority Pollutants (PP):

This product contains no priority pollutants listed under the U.S. Clean Water Act Section 307 (2)(1) Priority Pollutant List (40CFR 401.5).

<p style="text-align: center;">TIANJIN NORTH JINHENG CHEMICAL INDUSTRY PLANT</p>	<p style="text-align: center;">material safety data sheet</p> <p style="text-align: center;">effective date: 5/26/2005</p>
	<p style="text-align: center;">ANTIOXIDANT 168</p>

FDA: Food Packaging Status:

This product has been cleared by the FDA for use in food packaging and/or other applications as an indirect food additive. Call for further detailed information.

Occupational Safety and Health Act (OSHA):

This product is considered to be a hazardous chemical under the OSHA Hazard Communication Standard (29CFR 1910.1200). Its hazards are: Fire and the sudden release of pressure (explosion) hazard.

Resource Conservation and Recovery Act (RCRA):

This product is not considered to be a hazardous waste under RCRA (40 CFR 261).

SARA Title III: Section 302 – Extremely Hazardous Substances (EHS):

This product does not contain any chemicals regulated under Section 304 (40 CFR 355) as extremely hazardous substances.

SARA Title III: Section 304 – CERCLA:

This product does not contain any chemicals regulated under Section 304 (40 CFR 302) as hazardous substances.

SARA Title III: Section 311/312 – Hazard Communication Standard (HCS):

This product is regulated under Section 311-312 (40 CFR 370).

SARA Title III: Section 313 Toxic Chemical List (TCL):

This product does not contain a toxic chemical for routine annual Toxic Chemical Release Reporting' under Section 313 (40 CFR 372).

TSCA Section 5(e) – Consent Order / SNUR:

This product is not subject to a section 5(e) Consent Order or Significant New Use Rule (SNUR).

TSCA Section 8(b) – Inventory Status:

All Chemical(s) comprising this product are either exempt or listed on the TSCA inventory.

TSCA Section 12(b) – Export Notification:

This product does not contain any chemicals subject to Section 12(b) export notification.

International Regulations:

Australian Inventory Status:

This product contains only chemicals that are currently listed on the Australian Inventory of Chemical Substances.

Canadian Inventory Status:

This product contains only chemical that are currently listed on the Canadian Domestic Substance List (CDL).

European Inventory Status (EINECS):

This product contains only chemicals that are currently listed on the European Inventory of Existing Commercial Chemical Substances (EINECS).

Korean Inventory Status:

This product contains only chemicals that are currently listed on the Korean Chemical Substances List.

Japanese Inventory Status:

This product contains only chemicals currently listed on the Japanese Ministry of International Trade and Industry List of Existing and New Chemical Substances.

Additional International Information:

This product contains only chemical that are currently listed on the Philippine Inventory of Chemical Substances.

TIANJIN NORTH JINHENG CHEMICAL INDUSTRY PLANT	material safety data sheet
	ANTIOXIDANT 168

State Regulations:

California Proposition 65:

This product does not contain any chemicals currently on the California list of Known Carcinogens and Reproductive Toxins.

Massachusetts Right-to-Know:

This product does not contain any chemicals that are subject to Massachusetts Right-to-Know disclosure requirement.

New Jersey Right-to-Know:

The following is required composition information:

Chemical Name: Tris(2,4-di-(tert)-butylphenyl) phosphite
Common Name: ELC 168
CASRN: 31570-04-4

Pennsylvania Right-to-Know:

The following is required composition information:

Chemical Name: Tris(2,4-di-(tert)-butylphenyl) phosphite
Common Name: ELC 168
CASRN: 31570-04-4

Comment: NOT on the Pennsylvania Hazardous Substance List

16. OTHER INFORMATION

Disclaimer:

The information and recommendations contained herein are based upon data believed to be correct. However, NO guarantee or warranty of any kind expressed or implied is made with respect to the information contained herein. This Safety Data Sheet is current at the time of printing. Thereafter, it must not be construed as definitive with regard to any regulatory context.

Information Contact:

For technical information contact your technical sales representative. For additional health / safety / regulatory information, contact Product Safety at (330)773-2700.

Label Text:

EC Labeling – None required